

Claims

- [c1] 1. A method for reducing radiation exposure from an imaging system comprising:
 - determining an entry location;
 - operating the imaging system so as to cause the imaging system to emit radiation having a radiation intensity;
 - controlling said radiation intensity in a manner responsive to said entry location so as to create image data; and
 - processing said image data so as to create processed image data.
- [c2] 2. The method of claim 1, wherein said determining includes determining said entry location relative to said imaging system.
- [c3] 3. The method of claim 1, wherein said entry location is determined in a manner responsive to an entry cursor.
- [c4] 4. The method of claim 1, wherein said entry location is determined in a manner responsive to a target location cursor.
- [c5] 5. The method of claim 1, wherein said entry location is determined in a manner responsive to a FluoroCT scan.
- [c6] 6. The method of claim 1, wherein the imaging system includes an object cavity and a radiation source having a gantry angular position, wherein said radiation source is rotatably associated with the imaging system so as to rotate around said object cavity and wherein said entry location includes an entry angular range.
- [c7] 7. The method of claim 6, wherein said operating includes operating the imaging system so as to cause said radiation source to rotate around said object cavity.
- [c8] 8. The method of claim 6, wherein said controlling includes controlling said radiation intensity such that said radiation intensity is decreased by a predetermined minimization amount when said gantry angular position is within said entry angular range.

[c9] 9. The method of claim 8, wherein said predetermined minimization amount is equal to said radiation intensity.

[c10] 10. The method of claim 6, wherein said controlling includes controlling said radiation intensity such that said radiation intensity is increased by a predetermined minimization amount when said gantry angular position is within 180 degrees of said entry angular range.

[c11] 11. The method of claim 6, wherein said controlling includes controlling said radiation intensity such that said radiation intensity is increased by a predetermined minimization amount when said gantry angular position is within 90 degrees of said entry angular range.

[c12] 12. The method of claim 6, wherein said operating includes operating the imaging system so as to determine a radiation absorption angular profile, wherein said radiation absorption angular profile is responsive to said gantry angular position.

[c13] 13. The method of claim 12, wherein said controlling includes controlling the imaging system so as to modulate said radiation intensity in a manner responsive to said radiation absorption angular profile.

[c14] 14. The method of claim 1, wherein said operating includes operating the imaging system so as to determine an angular current profile.

[c15] 15. The method of claim 14, wherein said processed image data is responsive to said angular current profile.

[c16] 16. The method of claim 6, wherein said operating includes operating the imaging system so as to cause the imaging system to stop emitting radiation when said gantry angular position is within said entry angular range.

[c17] 17. A medium encoded with a machine-readable computer program code for reducing radiation exposure from an imaging system, said medium including instructions for causing controller to implement a method comprising:
determining an entry location;
operating the imaging system so as to cause the imaging system to emit

radiation having a radiation intensity;
controlling said radiation intensity in a manner responsive to said entry location
so as to create image data; and
processing said image data so as to create processed image data.

- [c18] 18. The medium of claim 17, wherein said determining includes determining said entry location relative to said imaging system.
- [c19] 19. The medium of claim 17, wherein said entry location is determined in a manner responsive to an entry cursor.
- [c20] 20. The medium of claim 17, wherein said entry location is determined in a manner responsive to a target location cursor.
- [c21] 21. The medium of claim 17, wherein said entry location is determined in a manner responsive to a FluoroCT scan.
- [c22] 22. The medium of claim 17, wherein the imaging system includes an object cavity and a radiation source having a gantry angular position, wherein said radiation source is rotatably associated with the imaging system so as to rotate around said object cavity and wherein said entry location includes an entry angular range.
- [c23] 23. The medium of claim 22, wherein said operating includes operating the imaging system so as to cause said radiation source to rotate around said object cavity.
- [c24] 24. The medium of claim 22, wherein said controlling includes controlling said radiation intensity such that said radiation intensity is decreased by a predetermined minimization amount when said gantry angular position is within said entry angular range.
- [c25] 25. The medium of claim 24, wherein said predetermined minimization amount is equal to said radiation intensity.
- [c26] 26. The medium of claim 22, wherein said controlling includes controlling said radiation intensity such that said radiation intensity is increased by a

predetermined minimization amount when said gantry angular position is within 180 degrees of said entry angular range.

- [c27] 27.T he medium of claim 22, wherein said controlling includes controlling said radiation intensity such that said radiation intensity is increased by a predetermined minimization amount when said gantry angular position is within 90 degrees of said entry angular range.
- [c28] 28.T he medium of claim 22, wherein said operating includes operating the imaging system so as to determine a radiation absorption angular profile, wherein said radiation absorption angular profile is responsive to said gantry angular position.
- [c29] 29.T he medium of claim 28, wherein said controlling includes controlling the imaging system so as to modulate said radiation intensity in a manner responsive to said radiation absorption angular profile.
- [c30] 30.T he medium of claim 17, wherein said operating includes operating the imaging system so as to determine an angular current profile, wherein said processed image data is responsive to said angular current profile.
- [c31] 31.T he medium of claim 22, wherein said operating includes operating the imaging system so as to cause the imaging system to stop emitting radiation when said gantry angular position is within said entry angular range.
- [c32] 32.A method for reducing the physician's radiation exposure from an imaging system while maintaining patient dose and image quality comprising:
 - obtaining an object to be scanned;
 - operating the imaging system so as to create image data;
 - displaying said image data on an output device; and
 - processing said image data using a processing device, wherein said processing device, determines an entry location;
 - operates the imaging system so as to cause the imaging system to emit radiation having a radiation intensity;
 - controls said radiation intensity in a manner responsive to said entry location so as to create image data; and

processes said image data so as to create processed image data.

[c33] 33. A system for reducing the physician's radiation exposure from an imaging system while maintaining patient dose and image quality comprising:
a gantry having an x-ray source and a radiation detector array, wherein said gantry defines a patient cavity and wherein said x-ray source and said radiation detector array are rotatably associated with said gantry so as to be separated by said patient cavity;
a patient support structure movingly associated with said gantry so as to allow communication with said patient cavity; and
a processing device, wherein said processing device, determines an entry location;
operates the imaging system so as to cause the imaging system to emit radiation having a radiation intensity;
controls said radiation intensity in a manner responsive to said entry location so as to create image data; and
processes said image data so as to create processed image data.

[c34] 34. The system of claim 33, wherein the imaging system is a computed tomography imaging system.

[c35] 35. A system for reducing the physician's radiation exposure from an imaging system while maintaining patient dose and image quality comprising:
an imaging system;
a patient support structure movingly associated with said imaging system so as to allow communication between said imaging system and a patient, wherein said imaging system generates image data responsive to said patient; and
a processing device, wherein said processing device, determines an entry location;
operates the imaging system so as to cause the imaging system to emit radiation having a radiation intensity;
controls said radiation intensity in a manner responsive to said entry location so as to create image data; and
processes said image data so as to create processed image data.

[c36] 36. The system of claim 35, wherein the imaging system is a computed tomography imaging system.